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ABSTRACT

This study examined oral-reading characteristics associated with language development in second-grade children, working on the suppositions that oral syntactic proficiency influences a child's use of syntax while reading and that this influence can be seen in oral reading, particularly in the contextual appropriateness of errors. It was also presumed that statistical control of word-recognition ability would help expose syntactic proficiency in reading by, in effect, equating subjects on the ability to use graphic cues and allowing the ability to use symbols to vary independently. Using 90 second-grade subjects, the research design had two parts: the exploration of the relationships among language development, reading ability, intelligence, socioeconomic status, and sex; and the correlation of oral reading behavior with language development when the influence of word recognition ability and intelligence is controlled. Results suggested that oral syntactic proficiency as measured by Chomsky's Linguistic Instrument does not relate to contextual appropriateness of oral-reading errors but, rather, to correction behavior. (HOD)

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ORAL READING CHARACTERISTICS ASSOCIATED WITH THE LANGUAGE DEVELOPMENT OF SECOND-GRADE CHILDREN

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Recent developments in oral reading error research have made it possible to infer what may be occurring in the reading process. Qualitative analysis of oral reading errors suggests, for example, a given reader's relative use of graphic and contextual cues. One would expect that such differences in reading strategy would be affected by differences in language development. This study explored that possibility by examining the oral reading characteristics associated with language development of second-grade children.

Various researchers have found language measures of one kind or another related to reading achievement. Everts (1961), Barnes (1962), and Loban (1963) used structural analysis of language which had been segmented according to phonological and communication units in their studies of language and reading abilities of elementary-age children. Fry (1968) also based her analysis of the oral language of second-grade children on phonological and communication units but analyzed them with a measure of transformational rules. Brittain (1970) did not, however, analyze spontaneous speech but focused on inflectional competence using an adaptation of the Berko (1958) test which involves nonsense words and inflections. Chomsky (1971) also tested specific constructions suspected to develop late and found a moderate correlation between reading achievement and language competence with four syntactic structures. All of these researchers used standardized reading achievement tests to measure reading ability.

Early language acquisition and language-reading research like that done by Loban was based on analysis of spontaneous speech and a minimal unit such as phonological and communication units. Such analysis is questionable, however, because it often equates length and linguistic complexity, depends on the validity of its theoretical base, and is in most cases a strictly quantitative measure. Recent research utilizes tests of specific grammatical features suspected or known to develop late. In language acquisition research this approach has been used by Chomsky (1969, 1971), Kessel (1970) on ambiguity, Barrie-Blackley (1973) on time adverbs, McGrath and Kunze (1973) on tag questions, among others. There are also weaknesses in this approach to language evaluation: the individual interview is time-consuming, the interviewer and the environment in general can easily affect the outcome, and the test-taking situation can be quite artificial. This approach does not, however, depend as much on the validity of its theoretical base as does the spontaneous speech approach. In other words, the specific construction approach tests understanding of a particular grammatical

CS 003 270

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feature and does not involve a structural, transformational, or any other linguistic theory in the analysis to the degree that the spontaneous speech approach does. For this reason, it was decided to use the specific construction approach in this study.

Of the constructions previously tested in language acquisition research, those in the Chomsky (1971) study seemed to be the most appropriate because they had already been used in language-reading research, seemed to have an acquisition sequence, and had been re-tested partially or wholly by other researchers (Olds, 1968; Kessel, 1970; Kramer, Koff, and Luria, 1972; Cromer, 1970; Cambon and Sinclair, 1974; Kelleher, 1973; Houston, 1973; and D'Asaro, 1974). Chomsky tested 36 children from six to ten years old on eight specific syntactic construction, three of which she had tested in an earlier study (Chomsky, 1969). Of the eight constructions, four seemed to be acquired in sequence: ask/tell, promise, easy to see, and and/although. In testing the ask/tell construction, Chomsky had two children ask and tell each other what to feed a doll. This task involved three aspects of the verbs ask and tell: (a) the distinction between ask and tell before simple complement clauses: Ask/tell X[1] what time it is or Ask/tell X the color of the doll's dress; (b) the distinction between ask and tell before complex complement clauses: Ask/tell X what food to give her now; and (c) the distinction between ask and tell in deleted subject recovery with complex complement clauses. In (c) tell adheres to the minimum distance principle. For example in the sentence Tell X what food to give her now, the subject of give is X, the closest noun phrase (NP) and consistent with the minimum distance principle; in the sentence Ask X what food to give her now, the subject of give is the farthest NP, you (or I). In other words, the child who had acquired this construction responded by asking the other child, "What food shall I give her now?" The child who did understand the difference between ask and tell but had not yet learned the difference between them in subject retrieval before complex complement clauses repeated, "What food to give her now," or more commonly, asked, "What do you want to give her now?" (For further information about this construction, see Chomsky, 1969, chap. 2.) In addition a picture identification section was included in the Chomsky interview which tested the two aspects of ask/tell related to complex complementary clauses.

The second construction, promise, also involved retrieval of the most distant NP and was therefore an exception to the minimum distance principle. For example, in the sentences Bozo promises Donald to lie down, and Bozo told Donald to lie down, it is Donald (the nearest NP) who lies down in the told construction but Bozo (the farthest NP) who lies down in the promise construction. The child who had not yet acquired knowledge of this

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1 X is used in the Language Development Interview to indicate the second child, S stands for the child being tested.

particular exception associated with promise interpreted both sentences alike; it was Donald who laid down. The props for this section of the interview were two dolls, Bozo the Clown and Donald Duck, which the children manipulated according to their understanding of the sentences.

The third construction, easy to see, involved retrieval of the deleted object as well as the subject of the infinitival verb. In the sentence The doll is easy to see, it was necessary to retrieve both the subject (someone else) and the object (the doll) of see. Chomsky placed a doll with eyes that opened and closed before the child with the doll's eyes closed. The child was asked if the doll was easy or hard to see and why. The child who had not yet acquired this construction answered, "Hard to see, because her eyes are closed," thinking that it was the doll who did the seeing.

The fourth construction examined was and/although. Two pairs of sentences using and/although were read to the child: The cowboy scolded the horse for running away, and/although I would have done the same. Then the interviewer asked, "What would I have done?" With and sentences, the answer is scolded and with although sentences the answer is run away, i.e., there is a different verb referent of done the same following and and although.

This study used an adaptation of the Chomsky interview of these four constructions to investigate differences in oral reading behavior according to language development level of second-grade children. First the relationships among language development, reading ability, intelligence, socioeconomic status, and sex of 90 children were examined in order to determine the contribution of each variable. This correlational analysis was followed by the selection of children within the second grade reading range who read aloud four stories at their instructional reading level. After their errors were analyzed, oral reading characteristics were compared according to language development levels established by the Chomsky interview adaptation.

Since previous research indicates that intelligence makes a significant contribution to the language-reading relationship (Barnes, 1962; Fry, 1968; Ribovich, 1975; Harris, 1975), its influence was statistically controlled in this comparison of oral reading behavior according to language development level. In addition, the influence of isolated word recognition ability was controlled as a way of isolating language and reading ability as much as possible. Isolated word recognition ability is the ability to identify a single word out of context; its control should expose a child's ability to obtain meaning from larger language units. It is at this level that language ability is probably most important to fluent reading.

With intelligence and word recognition ability controlled, it was expected that there would be a difference in contextual appropriateness of errors according to language development level, that the oral reading errors of high language develop-

ment children would be more contextually appropriate than those of low language development children. This expectation was based on the assumption that high language development children have more knowledge of language, particularly language constraints and redundancy, and that they use that knowledge while reading to produce fewer contextually inappropriate errors. No difference in graphic appropriateness of errors was expected, especially with the influence of word recognition ability statistically controlled. Likewise, no difference in correction behavior was expected.

METHODOLOGY

The research design had two parts: part one explored the relationships among language development, reading ability, intelligence, socioeconomic status, and sex; part two examined the correlation of oral reading behavior with language development when the influence of word recognition ability and intelligence is controlled.

Part One

Selection of Subjects

Subjects for part one were 90 second-grade students from West Cedar and Margaretta Carey Elementary Schools in Waverly, Iowa, a town of approximately 7.000 people. All children spoke Standard Midwestern as a first language; those with extreme speech or hearing disorders were not included. Subjects were between seven years - seven months and eight years - six months old.

Collection of Data

Language development: The interview. The purpose of the Language Development Interview was to establish a language development stage for each subject, using Chomsky's Linguistic Interview and Stages of Development as models. The four constructions tested were: ask/tell, promise, easy to see, and and/although. The only major changes made in the Chomsky ask/tell section were made in changing the task from feeding a doll to shopping for groceries. A Colorforms grocery store with flat plastic shapes of Charlie Brown, groceries, and a grocery cart seemed more interesting and less sex role-related than Chomsky's feeding of a doll.

The format of the promise section was identical to Chomsky's: (a) check on understanding of the word promise, (b) practice with props and task demands, and (c) the test itself. Palermo and Molfese (1972) have questioned the adequacy of the check on the understanding of promise. And, in a pilot administration of this interview children did have difficulty responding to questions like, "Can you tell me what you would say to your friend if you promise him that you'll call him up this afternoon?"

As a result, this question was replaced by two questions from the earlier Chomsky (1969) interview: "What do you mean when you make somebody a promise; what's special about a promise?" This approach avoided the confusion of the previous question.

The pilot administration of the interview also revealed awkwardness in the use of the present tense promises on the test items, e.g., Woodstock promises Snoopy to hop up and down. Past tense promised was substituted and seemed to be more understandable.

The final change in the Chomsky promise section involved the task. The Colorforms grocery store plus figures of Snoopy, Woodstock, and a ladder were used again. The children were to manipulate Snoopy or Woodstock according to their understanding of the promise sentences.

Since Chomsky had only one test of the easy to see construction, additional items were adapted from Cromer's (1970) study and included in this study. The child was given two large hand puppets, an alligator and a bear, and asked to act out a series of sentences which described one animal biting the other. These additional eight items included four easy to see constructions and four whose infinitival subject was indeed the subject of the sentence: The alligator is happy to bite as opposed to The alligator is easy to bite.

Three pairs of sentences rather than two were used in the and/although section. Chomsky's use of two items to test each construction seemed to be inadequate. In addition, the puppets from the previous section were used as memory aids, since the sentences in this section were so long and complicated. Chomsky had children who could, read the sentences themselves. However, since the main purpose of this part of the study was to determine the relationship between language and reading ability, it was impossible to include reading in the Language Development Interview. Instead, the alligator and bear puppets were used as characters in the test sentences and the children were instructed to use them for memory aids.

All four of the previously described constructions were examined by the same interviewer in a 15 to 20 minute individual interview. Audio tape recordings were made of the interviews for later scoring.

Language development: Scoring procedure. The Language Development Interview was scored from audio tape recordings with the exception of the promise and easy to see sections. The answers to these sections were demonstrated rather than spoken aloud and were therefore scored during the interview.

Each section of the interview contained five tests of the specific constructions. It was assumed that the children had acquired knowledge of the construction if they answered four of the five correctly. Since the and/although section contained only three items for each, two out of three correct was considered to indicate mastery of the construction.

As was previously mentioned, the ask/tell section examined three aspects of the verbs; only the third, the distinction between ask and tell in deleted subject recovery with complex complement clauses, was directly relevant to this study as part of Chomsky's Stages of Development. As a result, only the answers to the last half of the ask/tell interview including the picture identification test were scored for this study.

The and/although section also required special consideration in scoring. Since the verb referent following although was the closest NP and seemed to follow the minimum distance principle, children could choose the right verb referent whether or not they had acquired the specific construction. Chomsky hypothesized that children go through an intermediary stage when they choose the far referent for both and and although, then complete the developmental sequence by returning to the near referent for although. For this reason, although was not scored "correct" unless and was also correct.

Chomsky's Language Development Sequence involved five stages: Stage I, acquisition of none of the construction; Stage II, acquisition of easy to see; Stage III, acquisition of promise; Stage IV, acquisition of ask/tell and and; and Stage V, acquisition of although. This sequential arrangement of stages was followed in this study.

Reading ability. In order to obtain a general estimate of reading ability the Primary Reading Profiles Level 2 Tests 3, 4, and 5 (Word Recognition, Word Attack, and Reading Comprehension respectively) were administered to all 90 subjects. The tests were given in two sessions on the same day (total time approximately 55 minutes). The reading comprehension grade level score was considered relevant for this study.

Intelligence. The Lorge-Thorndike Intelligence Test, Level 2, Nonverbal Battery was administered. This particular test was chosen because it is (a) relatively short (approximately 35 minutes), (b) a group test, and (c) nonverbal (does not require reading). An intelligence quotient equivalent was reported for each subject.

Socioeconomic status. Hodge-Siegel-Rossi (1966) Prestige Scores were used as a quantitative score for socioeconomic status for all subjects. Prestige scores rate the occupation of the head of household on a scale of 14 to 78.

Sex. For purposes of statistical analysis, sex of subject was reported as 1 or 2, male or female respectively.

Statistical Analysis

Since the purpose in part one was to determine the relationships among language development, reading ability, intelligence, socioeconomic status and sex, intercorrelations among all five variables were determined. Multiple correlations were then computed using reading ability as the dependent variable. The order in which the independent variables were entered into the equation was varied in order to compute the partial correlation of language development and reading ability with differing combinations of factors controlled.

Part Two

Selection of Subjects

The purpose in part two was to explore the correlation of oral reading behavior with language development when the influence of word recognition ability and intelligence is controlled. This involved inventory of word recognition ability, oral reading of several selections by each subject, and comparison of the reading according to language development levels established in part one. Comparisons could not be made, however, unless the selections read were of approximately the same difficulty level for all subjects. For this reason, grade equivalent scores from the Primary Reading Profiles Comprehension Subtest were used to limit the range of reading ability to 2.3 to 3.3. Twenty-eight subjects remained after this selection process; one of the 28 was later excluded because of unusual oral reading difficulties (28% errors), leaving 27 subjects in part two.

Collection of Data

Language Development. The language development stages established in part one were used in part two.

Intelligence. The Lorge-Thorndike intelligence quotient scores from part one were used in part two.

Isolated word recognition. Standard Reading Inventory (SRI) word lists were used to obtain isolated word recognition levels for each part two subject. The score reported for each subject was the level of at least 80% accuracy. This score was then transformed to a strictly numerical scale of 1 to 11, representing the 11 reading levels of the SRI word lists.

Oral Reading. Just before administration of the word recognition inventory, each child read aloud four unfamiliar stories which were audio tape recorded for later scoring. Story 1 was 212 words long and the Botel (1962) readability was 2-1; Story 2 was 134 words long with 2-2 readability; Story 3 was 77 words long with 3-1 readability; and Story 4 was 109 words long, also with 3-1 readability. Order of administration was controlled so that half the subjects read Story 1 first and half read Stories 3 and 4 first.

Scoring Procedure

Since the language development and intelligence data were already scored in part one and the word recognition scoring relatively simple, the major scoring effort in part two involved the oral reading data. One major concern of oral reading analysis is scorer reliability. Hood (1976) has explored this concern and projected reliabilities for various numbers of judges. On the basis of her projections, four judges -- all graduate students -- were hired and trained for oral reading error analysis.

Procedures used for scoring were the same as those described in Hood (1976) except that whenever several errors were made on

a single test word, only the last error was scored. Following the training period of 15 3/4 hours, the judges independently scored the oral reading of each subject and recorded their scores on Data Preparation Worksheets which were then prepared for computer analysis.

The subject scores were the means over the four judges for each of the following error scores: the total number of errors expressed as a percent of the total number of words (Total Errors); the number of errors not contextually appropriate at the passage level and not corrected, expressed as a percent of the total number of words and assumed to represent loss of meaning (Meaning Loss); the percent of errors beginning with the same letter as the test word (Similar); the percent of errors corrected by the reader (Corrected); the percent of errors in each of four categories of contextual appropriateness: those appropriate in the passage as a whole (Pass-Context), appropriate in the sentence but not the passage (Sen-Context), appropriate considering the preceding but not the following context (Pre-Context), and not contextually appropriate (Not-Context); the percent of errors corrected in each of the four categories of contextual appropriateness (Corrected-Not, Pre, Sen, and Pass); the percent of graphically similar and different errors corrected (Corrected-Sim and Diff).

Statistical Analysis

Statistical analysis in part two involved intercorrelations and multiple correlations. Intercorrelations were determined among language development, word recognition ability, intelligence, reading ability, and the 14 oral reading categories. Then multiple correlations were computed between language development and oral reading with word recognition and intelligence controlled.

RESULTS AND DISCUSSION

Part One

Language Development

The Language Development Interview. The results of the Language Development Interview confirmed with only a few exceptions the finding reported in Chomsky's study. For the second-graders in this study the four constructions, ask/tell, promise, easy to see, and and/although, were still in the process of acquisition.

The first construction tested, the ask/tell construction, had been acquired by 32 of the 90 children. Of those 32, however, 12 (38%) passed the conversational but not the picture identification portion. This finding was inconsistent with Chomsky's. Of her 36 subjects, five (14%) had passed the picture identification but not the conversational portion; these

Chomsky calls "transition children." In other words, Chomsky found that performance on the picture identification and conversational portions usually coincided; when they did not, picture identification ability was usually acquired first. In this study there were 17 "transition children", but 12 of these children had acquired conversational ability first. There is no obvious explanation for this difference. However, since the conversational portion of the Language Development Interview included more test items and was generally more difficult than the picture identification portion, it was decided to consider these 12 children "successful" on the ask/tell construction. (For more information on the comparative difficulty of the conversation and the picture identification portions, see Chomsky, 1969, pp. 98-101.)

The promise construction had been acquired by 59 children and the easy to see construction had been acquired by 72. The one question from Chomsky's interview, "Is this doll easy or hard to see," was missed by only one child. This means that the test items fashioned after Cromer's (1970) were more discriminating than the Chomsky question, i.e., only one child would have failed easy to see had the section included only Chomsky's one test.

The and construction had been acquired by 49 children and the although construction by three. One would expect more children to have acquired although. Of Chomsky's subjects in the 7-7 to 8-6 age range, one (of eight) had acquired although. The children in this study, however, did not read the test sentences themselves, so the two studies were not completely comparable. In addition there were noticeable problems in the construction and administration of the and/although section: (a) the mixture of fantasy (the personification of the alligator and the bear) with reality (what would I, the interviewer, have done), which lead some children to believe that they could create an answer rather than locate it in the test sentence; (b) the difficulty for the interviewer of using a consistent and correct intonational pattern when reading the sentences to the child; (c) the ease with which a listener can miss the and or although; and (d) the difficulty level of the past conditional phrase would have done. Some of these problems may be avoided in future research by using test items like: Charlie Brown laughed at Woodstock for eating ice cream and/but Snoopy's going to do the same thing. What's Snoopy going to do?

Table 1 summarizes the results of the Language Development Interview. The decreasing number of children passing the test sections as one moves from easy to although confirms predictions based on the Chomsky (1971) study. The results also verify that the Language Development Interview is a valid test of the acquisition of easy to see, promise, and ask/tell. Changes must be made, however, in the and/although section before it will be a usable part of the interview.

Table 1

Results of Language Development Interview and Sequence

Construction	No. Having Acquired Construction	Stage	No. in Stage
None	—	I	18
Easy to See	72	II	21
Promise	59	III	23
And	49	IV	16
Ask/Tell	32	V	12
Although	3	VI	0

The Language Development Sequence. Chomsky's Language Development Sequence was not strictly applicable to the results of this study. First, the acquisition of ask/tell and and did not converge. Because 49 children had acquired and while only 32 had acquired ask/tell, it was decided to separate Stage IV with and remaining as Stage IV and ask/tell becoming Stage V. This means a possible six stages of development in this study as opposed to five in the Chomsky study.

Second, there were 38 children whose knowledge of the specific constructions did not follow the developmental model. Theoretically, these exceptions to the model suggest that the Language Development Sequence is best used as a gross indication of acquisition sequence and not as an evaluation of a single child's progress. However, for the purposes of this study, a language development stage was specified for these 38 subjects by assigning the number of the stage before interruption in the sequence. In other words, if a child had acquired easy to see and and but not promise, the last stage before interruption, Stage II, was assigned as the child's Stage of Development. This means that Table 1 must be interpreted with care. For instance, of the 18 children in Stage I, only four had not acquired any of the four constructions; the other 14 were assigned to Stage I because they missed easy to see but had acqqired other constructions in the sequence. Similarly, 12 of the Stage II subjects, 11 of Stage III, and one of Stage IV were classified in each particular stage because of interruptions in sequence.

Reading Ability

The Primary Reading Profiles reading comprehension grade equivalent scores ranged from 0.6 to 6.0 with a mean of 3.0.

Intelligence

The Lorge-Thorndike intelligence quotient equivalents ranged from 75 to 133 with a mean of 108.

Socioeconomic Status

Hodge-Siegel-Rossi Prestige Scores ranged from 17 to 78 with a mean of 40.

Sex

Of the 90 children in part one there were 50 girls and 40 boys.

Correlations

Table 2 presents simple correlations of language development (LD), reading ability (RA), intelligence (IQ), socioeconomic status (SE), and sex. These results indicate a strong, positive relationship between intelligence and reading ability (.64). The correlation coefficient for reading and language development is similar to that found by Chomsky (.38 in this

Table 2

Interc orrelations of Language Development (LD), Reading Ability (RA), Intelligence (IQ), Socioeconomic Status (SE), and Sex

	LD	RA	IQ	SE	SEX[a]
LD	—	.38**	.37**	.21*	.13
RA		—	.64**	.12	.31**
IQ			—	.15	.16
SE				—	-.08
SEX					—

** $p < .05$

* $p < .10$

[a]Since sex is scored 1 male, 2 female, positive correlation indicates females have higher reading ability

study compared with Chomsky's .39 by Kendall rank ordering). The coefficient for intelligence and language development is not as high as might be expected (.37), however the non-verbal instrument used would minimize the relationship. In her study, Chomsky used the Wechsler Intelligence Scale for Children and reported correlations with both verbal and performance scales; they were .63 and .47 respectively.

Table 3 presents the partial correlations of language development and reading ability with differing combinations of the variables controlled. When socioeconomic status and sex effects are controlled, the partial correlation between language development and reading ability is not appreciably less than the simple correlation. However, when intelligence is controlled, either alone or in combination with socioeconomic status and/or sex, r drops below the .05 level of statistical significance.

Part Two

Language Development

Of the 27 subjects in part two, five were in Stage I, 11 in Stage II, three in Stage III, five in Stage IV, three in Stage V, and none in Stage VI of the Language Development Sequence.

Intelligence

The intelligence quotient scores for the 27 children ranged from 88 to 125 with a mean of 105 and standard deviation of 8.98.

Isolated Word Recognition

The children's isolated word recognition abilities ranged from primer to fifth grade reading levels and averaged 5 on the numeric scale of 1 - 11, which corresponds to a reader level of second-grade, second semester (2-2). Standard deviation was 1.72.

Oral Reading

Table 4 presents the mean, range, standard deviation and scorer reliability for each of the 14 oral reading categories. The range of total errors, from one to 10 per 100 words, is within that recommended for instructional level by Betts (1946, p. 449), Johnson and Kress (1965, p. 8), and McCracken (1967, p. 84). In other words, the difficulty level of the material read was appropriate for oral reading error analysis.

Scorer reliability for the 14 oral reading categories ranged from .80 to .99. This range is similar to that estimated by Hood (1976) for four scorers: .81 to .99.

Correlations

Statistical analysis of the part two data involved intercorrelations and multiple correlations of language development, intelligence, word recognition, and the 14 oral reading cate-

Table 3

Partial Correlations of Language Development and Reading Ability with Differing Combinations of Remaining Variables Controlled

Variable(s) Controlled	r
NONE	.38**
SE	.37**
SEX	.36**
SEX, SE	.34**
IQ	.20*
IQ, SE	.20*
IQ, SEX	.19*
IQ, SEX, SE	.18*

** $p < .05$

* $p < .10$

Table 4

Mean, Range, Standard Deviation, and Scorer Reliability for Each Oral Reading Category

Category	Mean	Range	S.D.	Reliability
Total Errors	.06	.01-.10	.03	.99
Meaning Loss	.02	.00-.05	.01	.98
Similar	.50	.29-.82	.15	.97
Corrected	.34	.11-.56	.13	.96
Not-Context	.27	.12-.49	.10	.94
Pre-Context	.30	.11-.50	.09	.85
Sen-Context	.24	.05-.41	.09	.80
Pass-Context	.18	.04-.33	.08	.88
Corrected-Sim	.35	.00-.79	.17	.95
Corrected-Diff	.34	.06-.69	.14	.94
Corrected-Not	.40	.08-1.00	.23	.88
Corrected-Pre	.45[a]	.21-.82[a]	.15[a]	.88[a]
Corrected-Sen	.19[b]	.00-.63[b]	.16[b]	.93[b]
Corrected-Pass	.25[b]	.00-.88[b]	.19[b]	.82[b]

[a]One subject had no Pre-Context errors to correct, thus the data for this category are based on 26 subjects.

[b]Three subjects had no Sen- or Pass-Context errors, thus the data for these categories are based on 24 subjects.

gories. Table 5 presents intercorrelations of some of these variables. The restricted reading ability range is reflected in the low correlation between language development and reading ability: .13 here as compared with .38 in part one. One would expect the same to occur between intelligence and reading ability, but it does not; the correlation remains high at .66. Language development is significantly related only to intelligence and not to word recognition ability or total oral reading errors. The remaining significant correlation is between the percent of total errors and word recognition ability. Since the total errors category is a measure of word recognition ability in context, it would be expected that there would be a significant relationship between it and isolated word recognition ability.

Tables 6 and 7 present simple and partial correlations of language development, intelligence, and word recognition with the oral reading categories. Table 6 includes the categories for total errors, graphic similarity, and contextual appropriateness. Table 7 includes the categories for correction and meaning loss. The four language development columns in both tables represent first the simple correlations with language development, and then partial correlations with word recognition controlled, partials with intelligence controlled, and finally partial correlations with both intelligence and word recognition controlled.

Table 6 reveals no significant relationships between total errors, graphic similarity, or contextual appropriateness and either intelligence or language development. The only statistically significant correlations are between word recognition and total errors, graphic similarity of errors, contextually inappropriate errors, and errors appropriate at the passage level. It is important to note that controlling for word recognition did not significantly change the correlations with language development.

Table 7 reveals a significant relationship between intelligence and two of the correction categories (Corrected-Sim and Corrected-Pre) and between word recognition and three of the categories (Corrected-Pre, Corrected-Pass, and Meaning Loss). Simple correlations of language development are significant only for corrections appropriate within the error sentence. Again as in Table 6, partial correlations demonstrate that even with the influence of word recognition controlled, the relationship of language with the correction categories does not change. However when the contribution of intelligence is removed, language development is significantly related to general correction behavior, correction of graphically dissimilar errors, correction of errors appropriate to the preceding context, and correction of errors appropriate within the error sentence. All of these correlations are negative, which means that higher language development levels are related to lower proportions of corrections.

Table 5

Intercorrelations of Language Development (LD), Reading Ability (RA), Intelligence (IQ), Word Recognition (WR), and Total Oral Reading Errors (TE)

	LD	RA	IQ	WR	TE
LD	—	.13	.46**	-.03	.11
RA		—	.66**	.05	-.24
IQ			—	.17	-.22
WR				—	-.64**
TE					—

** $p < .05$

Table 6

Simple and Partial Correlations of Language Development (LD), Intelligence (IQ), and Word Recognition (WR) with Selected Oral Reading Categories

Oral Reading Categories	IQ	WR	LD	LD[a]	LD[b]	LD[c]
Total Errors	-.2[illegible]	-.64**	.11	.12	.24	.21
Similar	-.08	-.60**	.07	.08	.13	.07
Not-Context	-.20	-.41**	.06	.05	.17	.14
Pre-Context	.18	.18	.05	.04	-.04	-.07
Sen-Context	.05	.08	.00	.00	-.03	-.04
Pass-Context	-.01	.67**	-.09	-.09	-.09	-.02

[a]Partial correlation with word recognition controlled.

[b]Partial correlation with intelligence controlled.

[c]Partial correlation with intelligence and word recognition controlled.

**$p < .05$

Table 7

Simple and Partial Correlations of Language Development (LD), Intelligence (IQ), and Word Recognition (WR) with Oral Reading Correction Categories

Oral Reading Categories	IQ	WR	LD	LD[a]	LD[b]	LD[c]
Corrected	.31	.11	-.17	-.17	-.37*	-.36*
Corrected-Sim	.39**	.14	.04	.04	-.17	-.16
Corrected-Diff	.11	.16	-.31	-.31	-.40**	-.39**
Corrected-Not	.26	.21	-.02	.01	-.16	-.14
Corrected-Pre	.48**	.39**	-.05	-.04	-.34*	-.32*
Corrected-Sen	.02	-.14	-.41**	-.41**	-.41**	-.49**
Corrected-Pass	.05	-.32*	-.18	-.20	-.23	-.29
Meaning Loss	-.16	-.36*	-.01	-.02	.07	.03

[a]Partial correlation with word recognition controlled.

[b]Partial correlation with intelligence controlled.

[c]Partial correlation with intelligence and word recognition controlled.

**$p < .05$

*$p < .10$

The basic supposition of this study was that oral syntactic proficiency influences a child's use of syntax while reading and that this influence can be seen in oral reading, particularly in contextual appropriateness of errors. It was also presumed that statistical control of word recognition ability would help expose the use of syntactic proficiency in reading by in effect equating subjects on the ability to use graphic cues and allowing the ability to use syntax to vary independently.

The results of this study suggest, however, that oral syntactic proficiency as measured by Chomsky's Linguistic Interview does not relate to contextual appropriateness of oral reading errors but rather to correction behavior. Children at higher levels of language development corrected less in general, corrected graphically dissimilar errors less, and corrected less at two of the four levels of contextual appropriateness, namely Corrected-Pre and Corrected-Sen, than did children at lower levels. Perhaps one could infer that higher language development children are correcting internally errors that they do not correct orally, in other words that these children are using language redundancy to arrive at a correct internal interpretation of a story.

This proposition needs, however, to be tested by further research, using additional language measures and an assessment of reading comprehension. The Chomsky Linguistic Interview may be most useful in a theoretical development of the existence of language acquisition stages rather than as a measure of language development for children. It is also important to note that the tasks in the Linguistic Interview are not strictly syntactic and do involve semantic, conceptual development. It is likely, therefore, that the interview measures an aspect of what is usually included in the construct of verbal IQ. These possibilities need to be considered in further research.

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Oral Reading Characteristics Associated with the Language Development of Second-Grade Children (HYP)

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In order to investigate qualitative oral reading differences associated with language development, tape recordings of oral reading were evaluated from two groups of second-grade readers representing two levels of language development as determined by the Chomsky (1971) Linguistic Interview. The analysis of errors revealed that children in the higher language group corrected less particularly at the sentence and passage levels and that they corrected graphically dissimilar miscues less than the lower language group, suggesting that with increased language sophistication children make corrections "in their heads" and do not find it necessary to be verbally accurate in order to comprehend.